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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/578,447   | 05/08/2006  | Henning Braess       | PHOE030380US        | 6977             |
| 38107 7590 07/21/2009<br>PHILIPS INTELLECTUAL PROPERTY & STANDARDS<br>P. O. Box 3001<br>BRIARCLIFF MANOR, NY 10510 |             |                      |                     |                  |
| EXAMINER   |             |                      |                     |                  |
| BITAR, NANCY   |             |                      |                     |                  |
| ART UNIT   |             | PAPER NUMBER         |                     |                  |
| 2624   |             |                      |                     |                  |
| MAIL DATE  |             | DELIVERY MODE        |                     |                  |
| 07/21/2009   |             | PAPER                |                     |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/578,447

**Applicant(s)**

BRAESS, HENNING

**Examiner**

NANCY BITAR

**Art Unit**

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 and 17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1-8, 11 and 17 is/are allowed.
- 6) ☒ Claim(s) 9 and 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Arguments***

***In view of the appeal brief filed on 4/28/2009, PROSECUTION IS HEREBY REOPENED. A new ground of rejection set forth below.***

***To avoid abandonment of the application, appellant must exercise one of the following two options:***

***(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,***

***(2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.***

***A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:***

- 1. Claims 1-8, 11 and 17 are currently pending.***
- 2. Applicant's argument, see Appeal Brief, filed 4/28/2009, with respect to the rejection(s) of claim(s) 1-8, 11 and 17 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further***

***consideration, a new ground(s) of rejection is made for claims 9 and 10 in view of Karp et al (US 7,381,958).***

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salem et al (X-ray computed tomography methods for in vivo evaluation of local drugs release systems, IEEE 2002) in view of Karp et al (US 7,381,958).

As to claim 9, Salem et al teaches the method for the in vivo determination of the concentration of a pet tracer in the blood, comprising the steps of:  
production of at least one locally resolved image (A) of a body region (see abstract);  
determination of the spatial position (r) of a body volume filled with blood on the basis of the image produced (A) (X-ray CT combines excellent spatial resolution with sufficient sensitivity to analyze the pharmacokinetic properties of novel drug delivery systems. CT systems can typically provide sub millimeter spatial resolution combined with high temporal resolution. Therefore, tumors on the order of 1 cm in diameter are sufficiently sampled to provide accurate spatial information about platinated drug distribution, page

1311, column 1, paragraph 2). Salem et al. teaches the use of X-ray Ct imaging is a useful technique for the in vivo evaluation of the pharmacokinetics of platinated agents (page 1310, paragraph 1) .Moreover, Salem et al teaches We utilized a 3-D registration method to spatially align the sequence of temporal CT volumes in order to spatially examine drug distributions at different times in order to permit the determination of optimal carbolated concentration-time relationship. While Salem meets a number of the limitations of the claimed invention, as pointed out more fully above, Salem fails to specifically teach recording of annihilation quanta coming out of the body volume taking account of their times of flight. Specifically, Karp et al. teaches a time-of-flight (TOF) PET scanner to be developed that exhibits a reduction in noise propagation during image reconstruction and a gain in the signal-to-noise ratio. Such a PET scanner includes a time stamp circuit that records the time of receipt of gamma rays by respective PET detectors and provides timing data outputs that are provided to a processor that, in turn, calculates time-of-flight (TOF) of gamma rays through a patient in the cavity and uses the TOF of gamma rays in the reconstruction of images of the patient ( column 7 lines 36-column 8 line 52, figures 1-2). it would have been obvious to one of ordinary skill in the art to record the annihilation quanta with respect to their time of flight in Salem et al in order to have high image quality with a reduce in scanning time .Therefore, the claimed invention would have been obvious to one of ordinary skill in the art at the time of the invention by applicant.

As to claim 10, Salem teaches the method as claimed in claim 9, characterized in that a dynamic, preferably three-dimensional PET recording of a further body region

takes place, and that the data obtained here are combined with the established concentration of the PET tracer in the blood ( see abstract, The use of three-dimensional visualization provided a method of evaluating the placement of the drug delivery device in relation to the surrounding anatomy, and registration and reformatting allowed the accurate comparison of the sequence of temporal CT volumes acquired over a period of 24h, see abstract and paragraph IV page 1316)

***Allowable Subject Matter***

6. Claims 1-8, 11 and 17 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: After reviewing the remarks in the appeal brief filed 4/28/2009 the Examiner finds the remarks to be persuasive. None teaches a data processing a data processing unit which is coupled to the image-producing device and the TOF-PET unit the data processing unit in conjunction with the image producing device determines a spatial position of the body volume that is filled with blood, and determines detector element position of the TOF-PET unit such that the volume element of the TOF-PET unit lies in the body volume that is filled with blood. The Examiner finds no reason or motivation to combine the above references in an obviousness rejection thus placing the application in condition for allowance.

Any comments considered necessary by applicant must be submitted on later than the payment of the issue fee and to avoid processing delays should preferably

accompany the issue fee. Such submissions should be clearly labeled, comments on statement of reasons for allowance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to NANCY BITAR whose telephone number is (571)270-1041. The examiner can normally be reached on Mon-Fri (7:30a.m. to 5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vikkram Bali can be reached on 571-272-7415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Nancy Bitar/  
Examiner, Art Unit 2624

/VIKKRAM BALI/  
Supervisory Patent Examiner, Art Unit 2624